

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

U. S. DEPARTMENT OF AGRICULTURE
APR 26 1898
OFFICE OF THE
SECRETARY

9
8313

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

INSECT PEST SURVEY

Special Supplement (1948, No. 6)

Issued September 1, 1948

× THE COLONIZATION OF PARASITES OF THE EUROPEAN CORN
BORER IN THE UNITED STATES IN 1948¹/×

By K. D. Arbuthnot, D. W. Jones, S. W. Carter, and R. W. Evans,
Division of Cereal and Forage Insect Investigations

During the 1948 season 135,327 adult parasites of the European corn borer, Pyrausta nubilalis Hbn. were released in the United States. The six species released were the larvaevorid Lydella grisescens R. D., the ichneumonid Horogenes punctorius (Roman), the braconids Apanteles thompsoni Lyle., Chelonus annulipes Wesm., and Macrocentrus gifuensis Ashm. and the chalcid Eulophus viridulus Thoms. The four species, L. grisescens, H. punctorius, C. annulipes, and M. gifuensis were obtained from collections of overwintering corn borer larvae made in the Eastern States where these exotic parasites are relatively abundant. A. thompsoni was obtained from Europe through the cooperation of the Division of Foreign Parasite Introductions and E. viridulus was received through the courtesy of the Dominion Parasite Laboratory at Belleville, Ontario, Canada.

Parasites were released in the following ten states: Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, Nebraska, New Jersey, and Wisconsin. Table 1 summarizes the total releases of the six species in the various states.

The parasite liberations in 1948 bring the total number of exotic parasites released in the United States as an aid in control of the European corn borer, from the inception of this work to date, to 7,952,340. Table 2 summarizes all these releases by States and species to August 1, 1948.

¹/ Financial aid for the conduct of the parasite program was supplied by the following State agencies: The departments of agriculture of Iowa and Wisconsin and the Agricultural Experiment Station of Wisconsin. The following State agencies assisted in the release of parasites: The agricultural experiment stations of Indiana, Iowa, Kentucky, Maryland, Missouri, Nebraska and Wisconsin, the Illinois Natural History Survey, and the State departments of agriculture of Iowa and Minnesota.

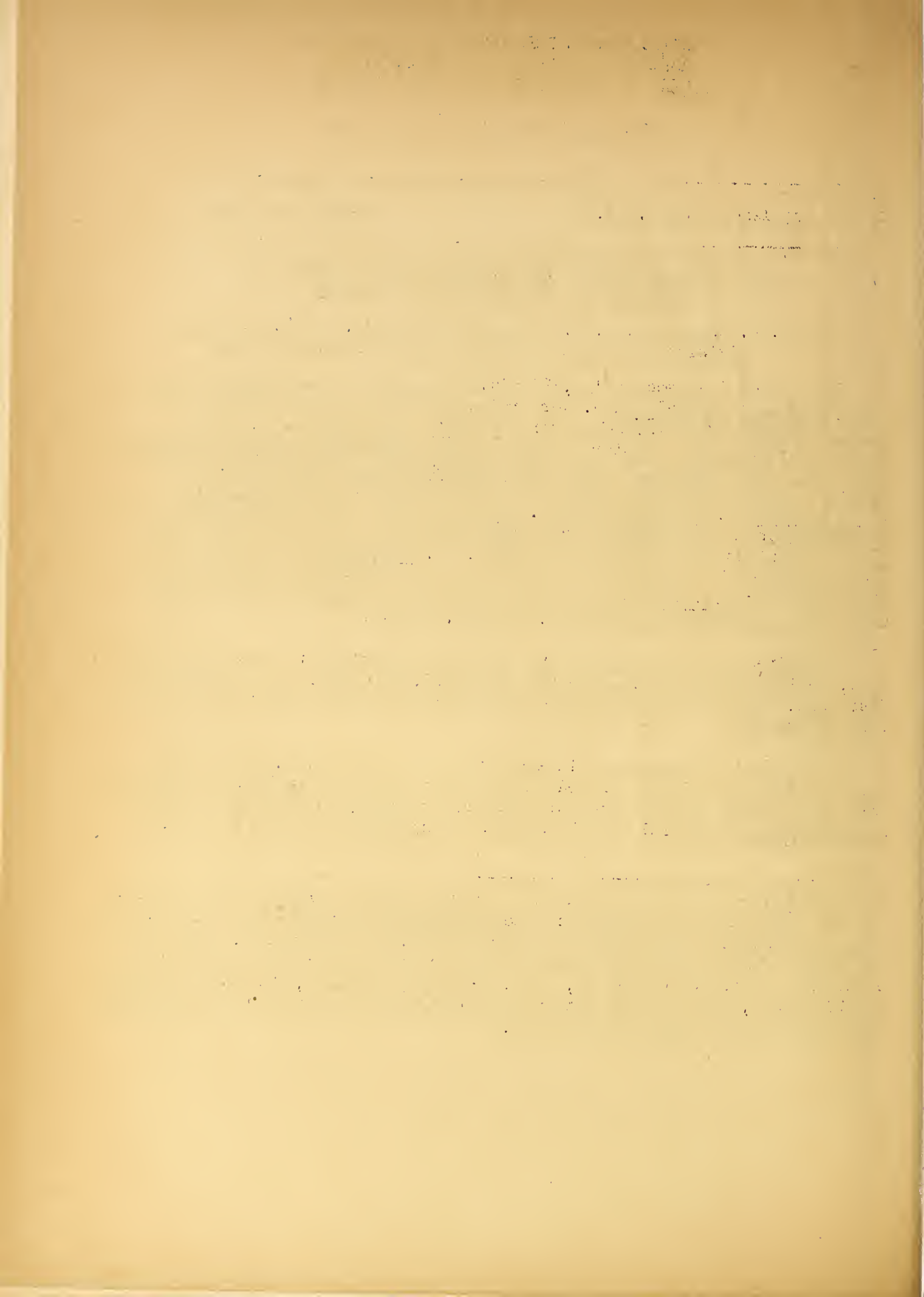


Table 1.--Number of parasites of the European corn borer released in the United States in 1948.

State	<u>Apanteles</u> <u>thompsoni</u> Lyle	<u>Chelonus</u> <u>annulipes</u> Wesm.	<u>Eulophus</u> <u>viridulus</u> Thoms.	<u>Horogenes</u> <u>punctorius</u> (Roman)	<u>Lydella</u> <u>griseus</u> R. D.	<u>Macrocentrus</u> <u>gifuensis</u> Ashm.	Total
Illinois	-	-	-	-	-	18,938	18,938
Indiana	-	-	-	-	-	17,623	17,623
Iowa	-	135	3,979	856	1,449	38,554	44,973
Kentucky	-	-	-	-	-	16,605	16,605
Maryland	-	-	1,806	-	-	5,934	7,740
Minnesota	-	-	515	492	361	19,200	20,568
Missouri	-	-	-	-	-	4,632	4,632
Nebraska	-	-	-	-	-	1,980	1,980
New Jersey	12	-	-	-	-	-	12
Wisconsin	-	-	1,944	56	256	-	2,256
Total	12	135	8,244	1,404	2,066	123,466	135,327



Table 2.--Total numbers of exotic species of parasites of the European corn borer released in the United States up to August 1, 1948

State	<u>Apanteles</u> <u>sp.</u>	<u>Apanteles</u> <u>thompsoni</u> <u>Lylo</u>	<u>Apanteles</u> <u>mittii</u> <u>Moig.</u>	<u>Bracon</u> <u>atricornis</u> <u>(Smith)</u>	<u>Campoplex</u> <u>multicinctus</u> <u>Grav.</u>	<u>Campoplex</u> <u>pyraustae</u> <u>Smith</u>	<u>Chelonus</u> <u>annulipes</u> <u>Woon.</u>	<u>Promastus</u> <u>fraxinobitidis</u> <u>Gam.</u>
Connecticut	-	21,263	178	12	-	1	54,105	1,483
Delaware	-	-	-	-	-	-	2,229	-
Illinois	-	-	-	-	-	-	1,381	-
Indiana	-	5,700	8	-	-	-	7,496	-
Iowa	-	-	-	-	-	-	4,117	-
Kentucky	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-
Maryland	-	-	-	-	-	-	3,966	-
Massachusetts	388	69,139	514	127	1,129	1,697	16,010	6,762
Michigan	-	34,837	395	-	-	-	6,363	-
Minnesota	-	-	-	-	-	-	-	-
Missouri	-	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-	-
New Hampshire	-	-	-	-	-	-	-	-
New Jersey	-	12	-	-	-	-	9,585	1,192
New York	3	51,106	463	-	61	16	137,821	1,109
North Carolina	-	-	-	-	-	-	-	-
Ohio	-	52,505	1,664	-	357	38	22,952	5,145
Pennsylvania	-	5,774	20	-	-	-	-	-
Rhode Island	-	11,756	188	211	123	47	7,523	1,014
Vermont	-	-	-	-	-	-	6,982	-
Virginia	-	-	-	-	-	-	11,388	2,971
Wisconsin	-	-	-	-	-	-	701	-
Total	391	252,097	3,430	350	1,670	1,799	292,619	19,676



Table 2. --Continued

State	Campoplex alkae (Ell. & Sacht.)	Eulophus viridulus Thomas.	Exeristes roberator Fab.	Horogenes punctorius (Roman)	Lydella griseus R. D.	Macrocentrus gifuensis Ashm.	Meteorus nigricollis Thomas.
Connecticut	1,057	17,200	-	6,882	42,723	23,970	-
Delaware	-	6,000	-	3,959	3,179	81,789	-
Illinois	-	2,961	2,302	5,273	14,527	165,552	-
Indiana	5,161	8,646	22,905	10,224	37,121	142,460	-
Iowa	-	18,468	-	15,082	52,974	607,342	-
Kentucky	-	2,834	-	1,148	2,434	33,004	-
Maine	-	-	-	-	1,927	-	-
Maryland	-	7,639	-	7,123	18,563	181,627	-
Massachusetts	28,526	88,494	54,957	30,938	92,087	82,444	-
Michigan	24,075	44,037	86,607	11,987	121,219	44,710	-
Minnesota	-	4,497	-	1,815	4,293	41,250	-
Missouri	-	-	-	468	995	23,486	-
Nebraska	-	-	-	-	-	1,980	-
New Hampshire	-	-	-	593	5,569	-	-
New Jersey	-	8,507	-	4,349	9,111	108,445	-
New York	9,279	57,341	40,050	17,994	127,312	107,503	-
North Carolina	-	1,968	-	481	902	7,889	-
Ohio	36,398	103,634	87,826	45,987	220,896	152,951	-
Pennsylvania	550	3,994	20,119	3,290	14,072	91,587	-
Rhode Island	4,636	7,446	-	14,572	35,293	39,182	8
Vermont	-	-	-	2,279	9,813	-	-
Virginia	-	3,974	-	4,325	8,148	106,457	-
Wisconsin	-	4,744	-	4,096	7,794	57,547	-
Total	109,682	392,384	314,766	192,855	830,952	2,101,175	8

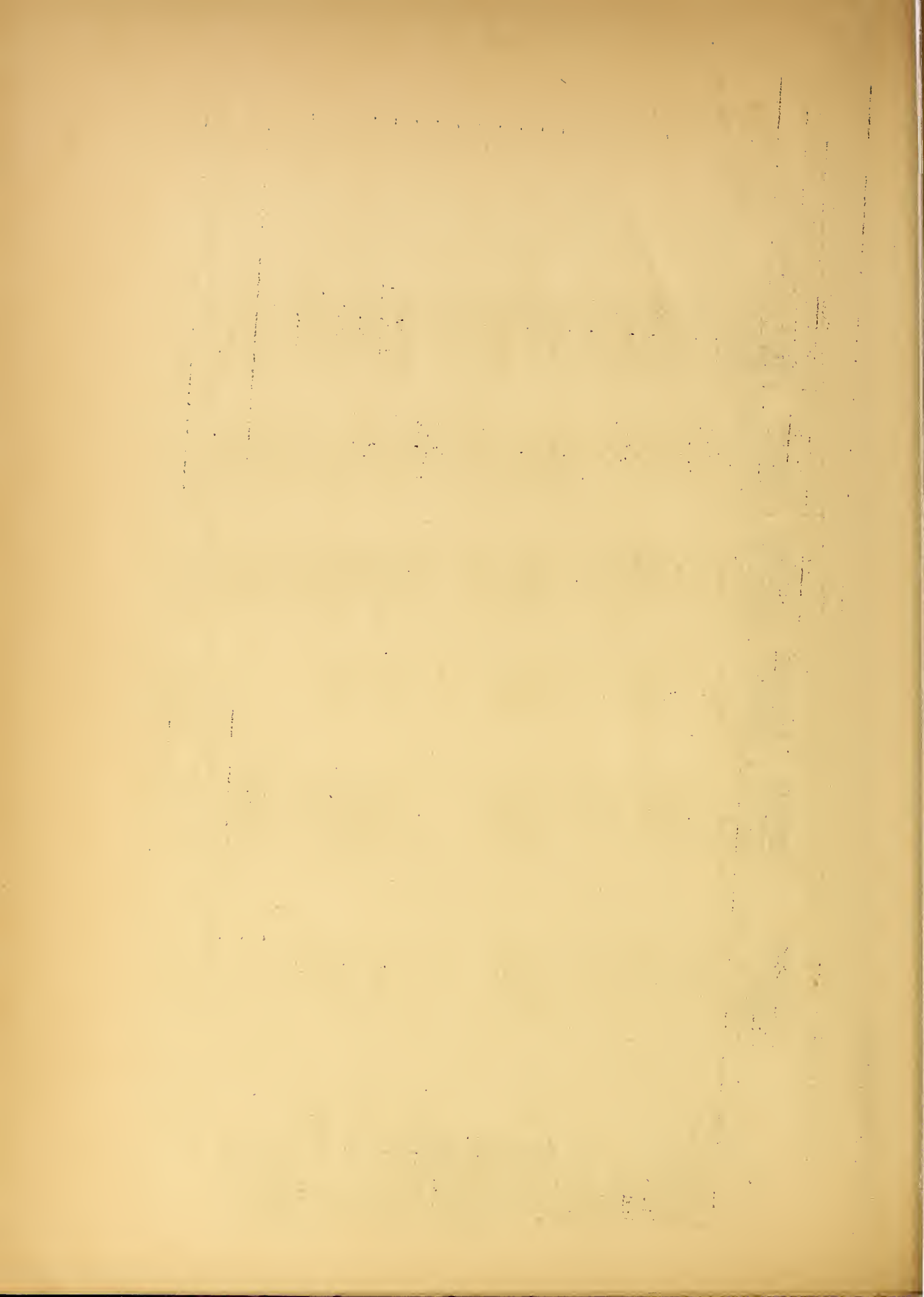


Table 2.--Continued

State	<u>Microbracon brevicornis</u> Wesm.	<u>Microgaster tibialis</u> Nees.	<u>Nemorilla floralis</u> (Fall.)	<u>Phaenogenos nigridens</u> Wesm.	<u>Phorocera erecta</u> Coq.	<u>Pseudoperichaeta roseanae</u> (B. & B.)	Total
Connecticut	4,952	7,101	533	1,620	193	7,754	191,032
Delaware	-	-	-	-	-	-	97,156
Illinois	3,635	-	-	-	-	-	195,631
Indiana	105,109	8,985	-	-	-	8,526	362,341
Iowa	-	-	-	500	-	-	698,473
Kentucky	-	-	-	-	-	-	39,420
Maine	-	-	-	-	-	-	1,927
Maryland	1,616	-	-	-	-	-	220,534
Massachusetts	1,084,590	84,689	371	21,885	844	64,755	1,730,346
Michigan	534,334	81,747	-	3,933	-	17,896	1,012,140
Minnesota	-	-	-	-	-	-	51,855
Missouri	-	-	-	-	-	-	24,949
Nebraska	-	-	-	-	-	-	1,980
New Hampshire	-	-	-	-	-	-	6,162
New Jersey	11,857	1,809	-	4,037	-	-	158,904
New York	354,265	34,752	-	569	4	29,743	969,391
North Carolina	-	-	-	-	-	-	11,240
Ohio	587,583	138,585	843	8,306	499	32,334	1,498,503
Pennsylvania	127,305	6,842	-	347	-	3,800	277,700
Rhode Island	-	19,740	-	12,037	-	9,305	163,081
Vermont	-	-	-	-	-	-	19,074
Virginia	5,157	3,199	-	-	-	-	145,619
Wisconsin	-	-	-	-	-	-	74,882
Total	2,820,403	387,449	1,747	53,234	1,540	174,113	7,952,340

LIBRARY
JAN 11 1945
SEI 8 1945
U. S. DEPARTMENT OF COMMERCE